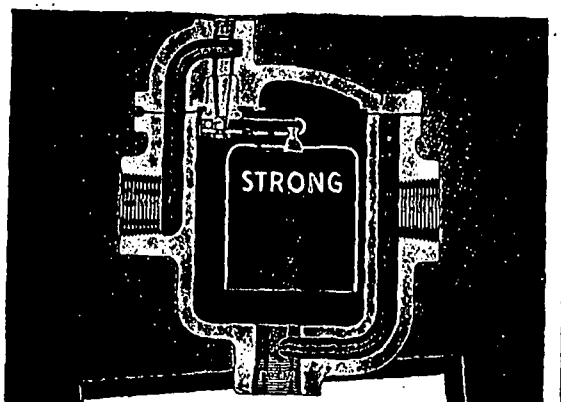

5 Reasons
STRONG* 70 Series Traps
give better service!

Look to these five reasons for long, trouble-free service in STRONG 70 Series Traps:

1. Valve and seat guaranteed leakproof for one year—made of STRONG's patented, wear-resistant Anum-Metl;
2. Easy servicing—permitted by the renewable seat design, cover with all working parts easily removed without breaking pipe connections;
3. One piece bucket—stainless steel, no welds;
4. Turbulence avoided, choking minimized, 25% greater capacity—with STRONG's exclusive Hi-Cap orifice;
5. No dribbling, quick, full opening—high ratio leverage.

STRONG *in-line* 70 Series Traps are available in sizes from ½" to 1", semi-steel construction. STRONG's "two-in-one" blast trap with integral thermal air vent is also available in the 70 Series (see cut below).

Catalog No. 67 describes these traps in detail along with other STRONG traps. Write today.

*Trademark Reg. U. S. Pat. Off.

STRONG, CARLISLE & HAMMOND COMPANY
1392 West 3rd Street
Cleveland 13, Ohio

OTHER STRONG STEAM SPECIALTIES



STRONG

grid, in terms of X, is given in the following table:

	X ohms		X ohms
$r_1 = R_o(1-S_1)$	= 6.62	$r_7 = r_1 S_1^6$	= [illegible]
$r_2 = r_1 S_1$	= 4.25	$r_8 = r_1 S_1^7$	= [illegible]
$r_3 = r_1 S_1^2$	= 3.27	$r_9 = r_1 S_1^8$	= [illegible]
$r_4 = r_1 S_1^3$	= 2.52	$r_{10} = r_1 S_1^9$	= [illegible]
$r_5 = r_1 S_1^4$	= 1.94	$r_{11} = r_1 S_1^{10}$	= [illegible]
$r_6 = r_1 S_1^5$	= 1.50	$r_{12} = r_1 S_1^{11}$	= [illegible]

Slip at the various steps is: S_1 = 0.77, $S_2 = (0.77)^2 = 0.59$, $S_3^2 = 0.7$[illegible] = 0.46, etc. Resistance X is either known or can be measured.

For a rheostat to start under ½ load

$$R_o = \frac{X}{S} = \frac{X}{0.021} = 47.6\ X \text{ ohms}$$

To find the value of the individual resistors, proceed as before. E L Fladby, Berkeley, Calif.

Grids Short Circuited

It is highly probable that *JHV's* motor controller has been incorrectly installed or connected. If the resistors were too small in relation to the motor or to transformed current, as he implies, overheating would occur at the grids. As this does not appear to be the case, resistance is ample.

The motor comes nearly to full speed at once, as if most of the resistors were already cut out, which is probably the cause of his trouble. Contact points may be connected incorrectly to the grids, or perhaps two phases of the secondary are short circuited. This can happen at resistor connections, at contact points of controller, at brushes and brush holders, or between sliprings.

I suggest *JHV* make sure that each phase of the secondary is clear, including sliprings and rotor windings, and check the resistance at each of the 12 settings of the controller. George Holman, Marissa, Illinois.

Calculate Resistance Using Water-Load Box

Choice of suitable grid resistors is based on three definite elements. These are the locked-rotor voltage, the value of secondary (rotor) amperes, and the type of application, namely continuous, intermittent, or merely for starting service. For each of the applications, there are grids of different ratings.

A close approximation of the resistor values can be obtained by installing water-load box in the rotor circuit. When the correct speed is obtained at the required load, record the voltage across each water-resistance unit and the current flowing. Using Ohm's law, we may calculate the proper value of grid resistors. C O von Dannenberg, Brooklyn, N. Y.



THE *Responsibility* OF COMMUNITY LEADERSHIP

YOU as a leader in your community have a sacred obligation—to yourself, your family, your neighbor and your country. Use your experience and knowledge to the full extent of your ability to shape a public opinion which will help to establish right and justice for a lasting world peace, and preserve our country's cherished heritage of freedom for the individual.

Only through the intelligent, active work of community leaders can we keep America as the impregnable citadel of liberty and freedom.

The Youngstown Sheet and Tube Company
General Offices—YOUNGSTOWN 1, OHIO
Export Offices: 500 Fifth Avenue, New York
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS
Pipe and Tubular Products · Sheets · Plates · Conduit · Bars · Rods · Wire · Electrolytic Tin Plate · Coke Tin Plate · Cold Finished Carbon and Alloy Steel Bars · Tie Plates and Spikes.